

JOINT MEETING OF CHARLOTTE COUNTY AND SARASOTA COUNTY
BOARD OF COUNTY COMMISSIONERS
OCTOBER 19, 2016



BEACH EROSION STUDY ON NORTH MANASOTA KEY



OCEAN SURVEYS, INC.



COASTAL
ENGINEERING
CONSULTANTS
INC



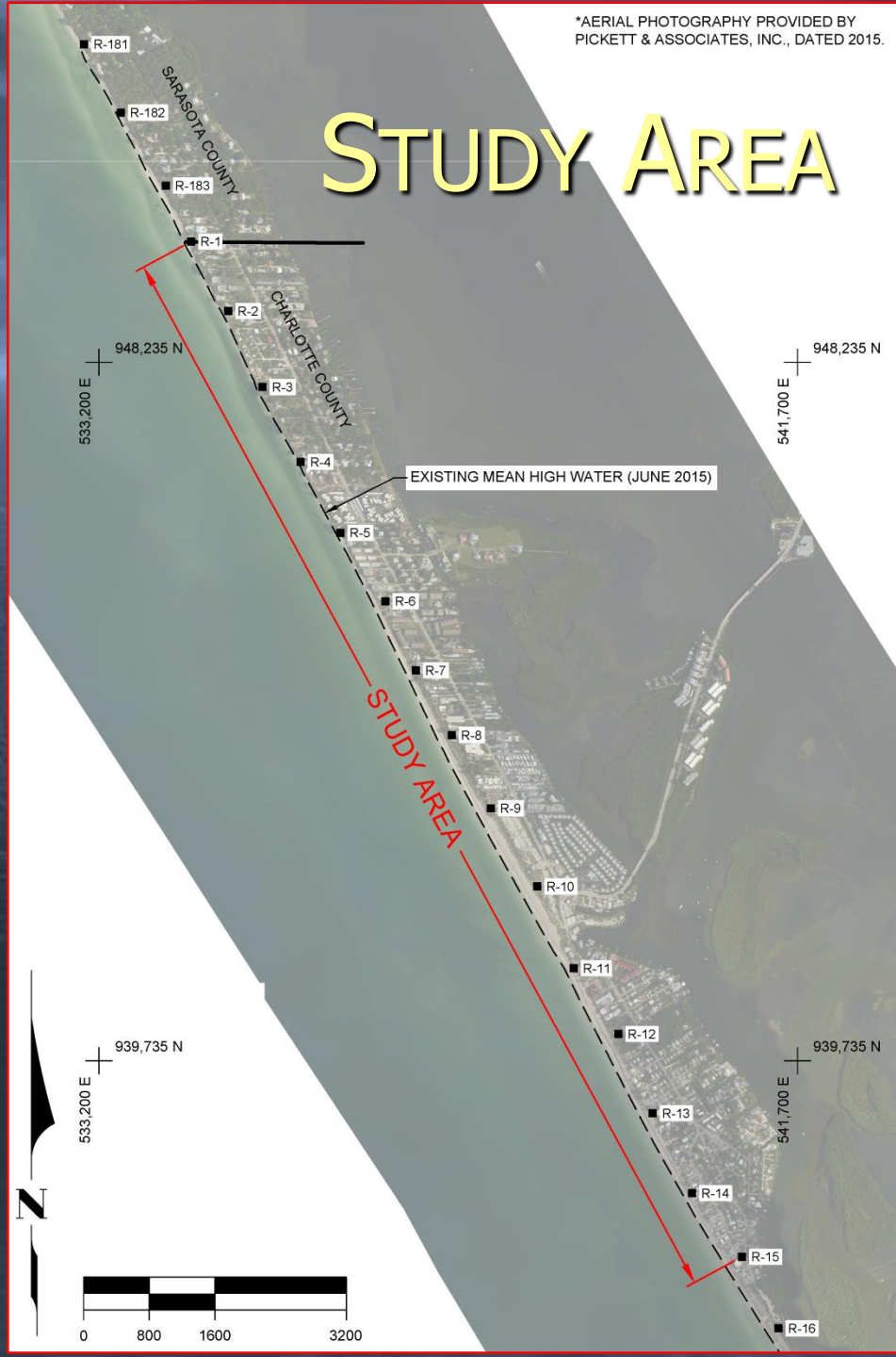
Coastal Eco-Group Inc.



TETRA TECH

OUTLINE

- Introduction ~ Information Sharing
- Historical Perspective
- Current Conditions
- Conceptual Restoration Plans
- Potential Sand Sources
- Opportunities for Partnering
- Schedule

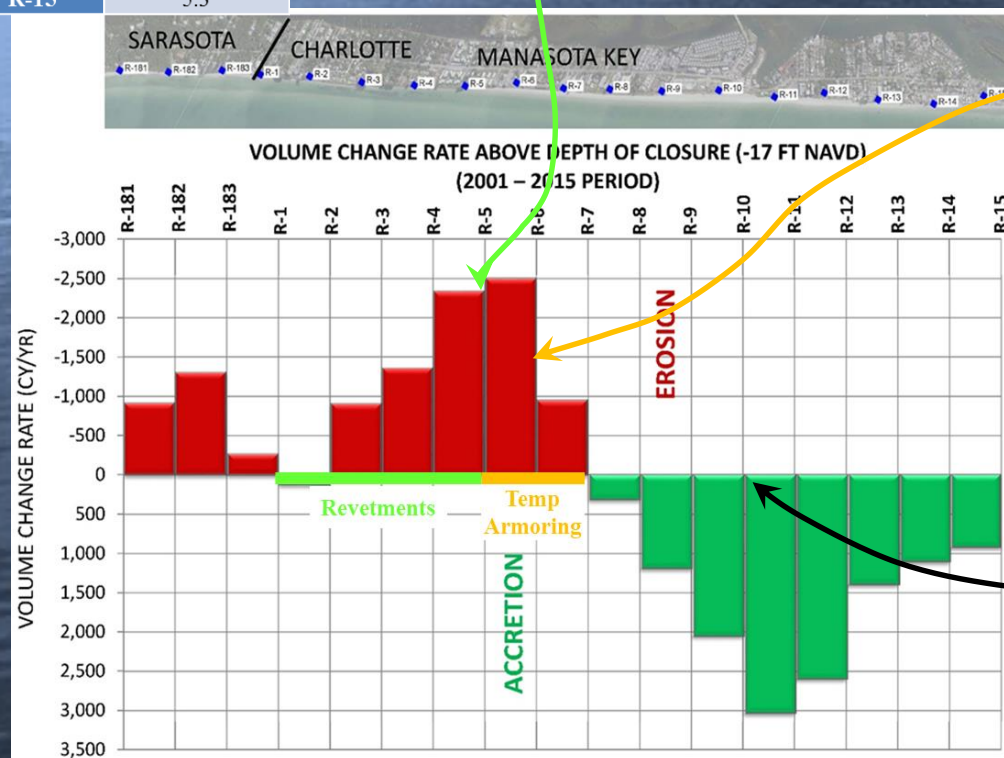


HISTORICAL PERSPECTIVE

- 2001-2003: Sarasota-Charlotte Beach Erosion Study
 - Co-funded by Counties and FDEP
 - Erosion Analysis, Physical & Natural Resource Assessment,
 - Potential Sand Sources, Costs, Funding Approaches
- Beach Restoration Plan – Regional Alternative
 - Blind Pass Park (S) to Chadwick Park (C)
 - Historical Erosion Rate ~ 0.9 ft/yr 1.1 cy/ft/yr
 - Small area of exposed hardbottom @ County Line
 - Beach Nourishment to Address Chronic Erosion (R156-R13)
 - 42,600 ft 150-ft wide berm 52 cy/ft
 - 2.2 Mil cy \$22 Million (2003 Dollars)
 - 50 / 50 Split amongst stakeholders for support

| R-Mon | Change Rate (FT/YR) |
|-------|---------------------|
| | 2001-2015 |
| R-181 | -0.4 |
| R-182 | -2.1 |
| R-183 | -1.5 |
| R-1 | 0.2 |
| R-2 | -1.9 |
| R-3 | -0.8 |
| R-4 | -4.8 |
| R-5 | -5.6 |
| R-6 | -7.0 |
| R-7 | -4.5 |
| R-8 | -3.3 |
| R-9 | -2.3 |
| R-10 | -1.7 |
| R-11 | -2.0 |
| R-12 | 2.7 |
| R-13 | 5.2 |
| R-14 | 7.1 |
| R-15 | 5.3 |

CURRENT CONDITIONS



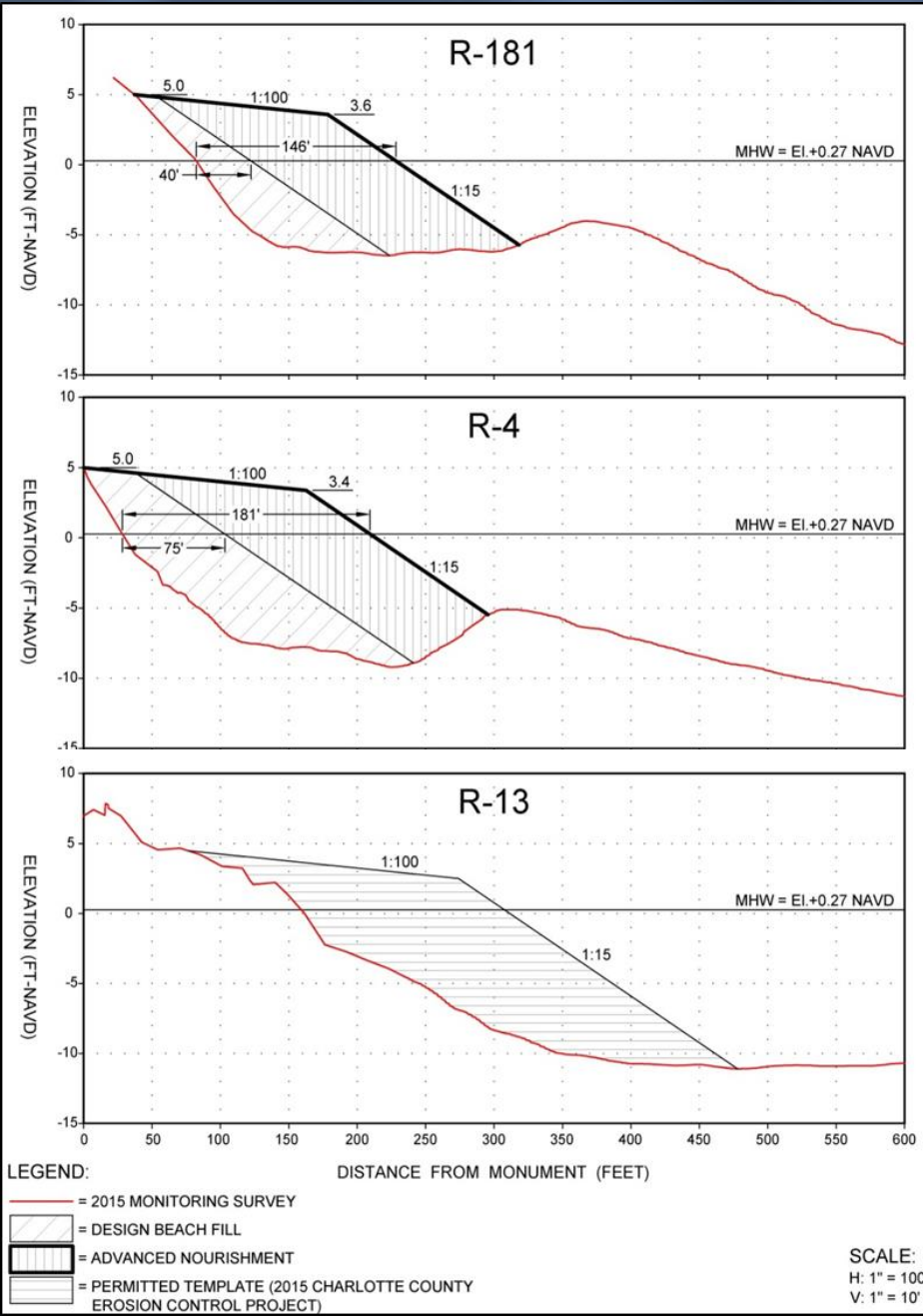
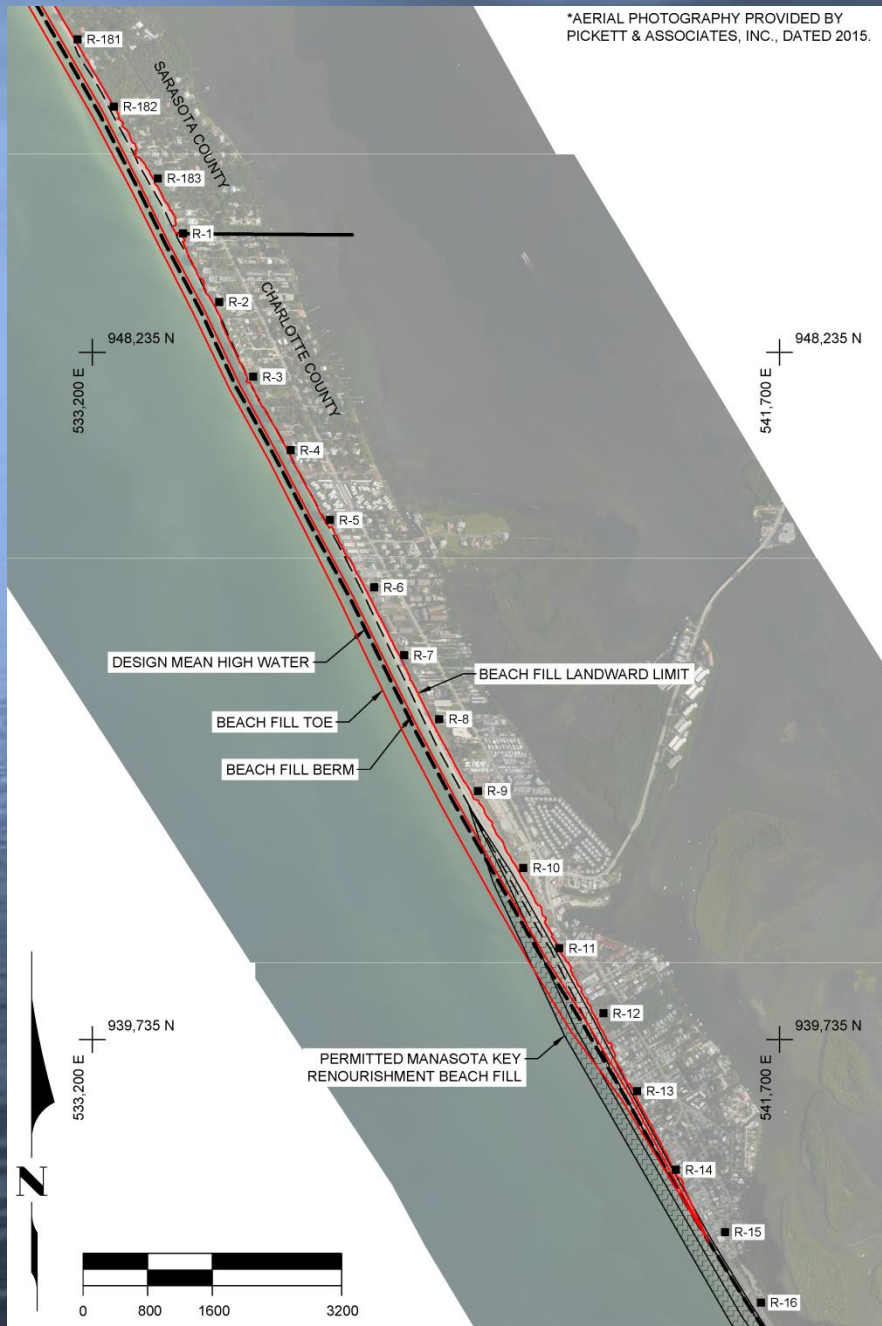
CONCEPTUAL RESTORATION PLANS

- Design Criteria: 2015 Erosion Analysis Update
- **Update 2003 Beach Fill Template Design**
 - Account for Background Erosion & Design Storm Event
 - 8-Year Nourishment Interval
 - ~ 63 cy / ft (consistency with 2001-03 study recommendations plus erosion since 2001)
- **Nearshore Hardbottom Impacts**
 - Over 4 acres will be covered requiring mitigation
 - Construct artificial reef using native limestone
- **Three Conceptual Plans Developed**
 - Stand Alone (R1-R15), Regional Plan (R173-R15), Charlotte County Existing Project Extension (R1-R18)

SARASOTA-CHARLOTTE COMBINED CONCEPTUAL REGIONAL PLAN

- Length ~ R-173 through R-15 (~24,600 ft)
- Volume ~ 1,540,000 cy (Initial Nourishment) / 960,000 cy (8-Yr Renourishment Interval)
- Beach Berm Width
 - 40 Ft Wide Design Beach
 - +35 ft to Design Beach Along Revetments
 - Account for Background Erosion ~ 3.9 ft / yr
 - Account for 25-Yr Design Storm Event
- Beach Fill Volume
 - ~ 52 cy / ft (2001-03 study recommendation)
 - ~ 11 cy / ft for design storm event

CONCEPTUAL PLAN VIEW & TYPICAL SECTIONS



CONCEPTUAL OPINION OF PROBABLE PROJECT COSTS

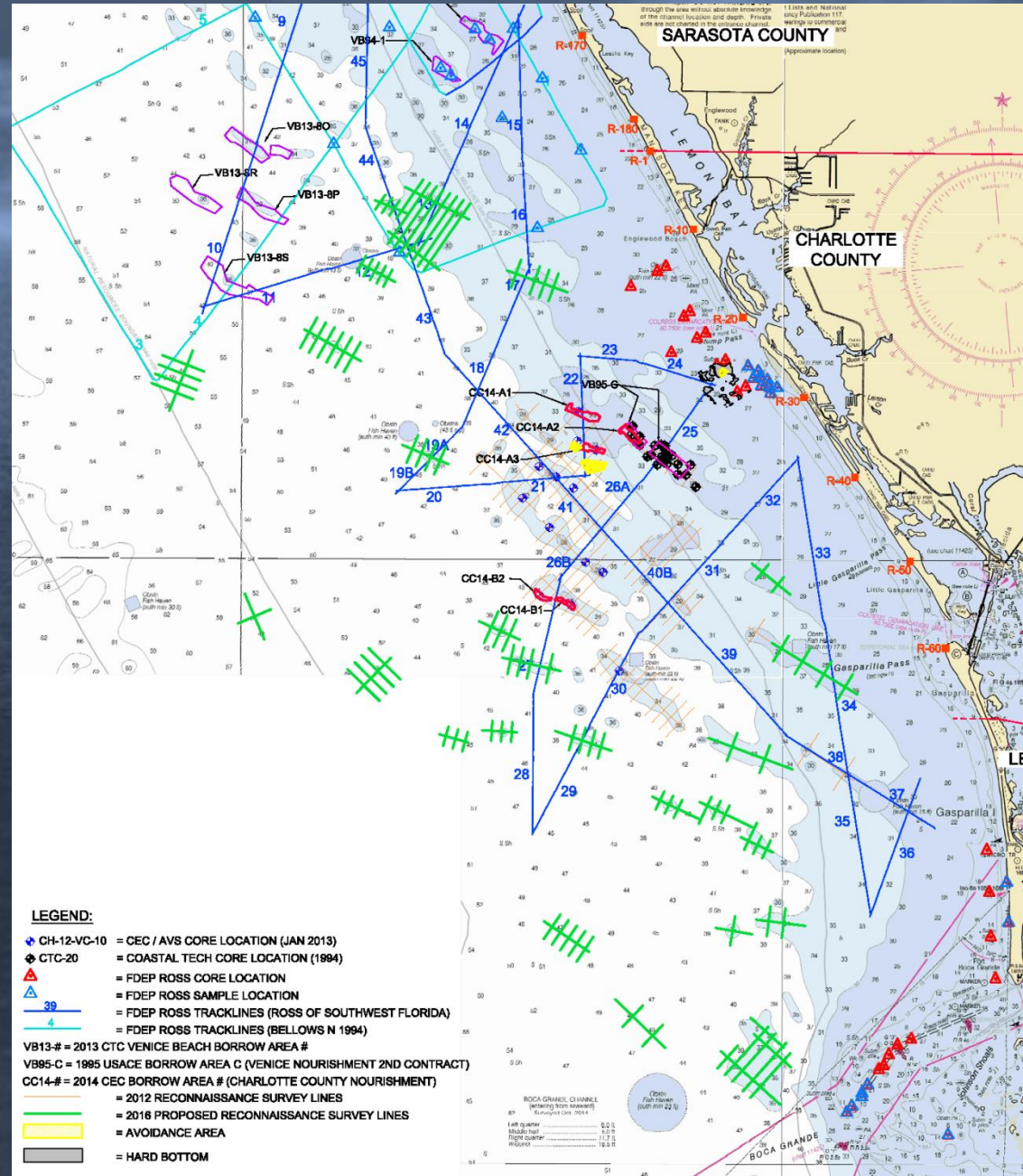
- Prepared Order of Magnitude Budgets – Initial Const
- Elements (Expressed in 2019 Dollars)
 - Mobilization / Demobilization; Beach Fill; Mitigation
 - Soft Costs (Contingencies, Engineering and Permitting, 3 Years of Post-Construction Monitoring) ~ 25%

| Concept | Total Cost | Cost/Mile | Unit Cost W/O Mitigation) | Unit Cost W/ Mitigation |
|---------------|--------------|-------------|---------------------------|-------------------------|
| #1 (R1-R15) | \$24,215,000 | \$9,068,000 | \$18.92 | \$27.52 |
| #2 (R173-R15) | \$38,808,000 | \$8,488,000 | \$20.29 | \$25.20 |
| #3 (R1-R18) | \$26,822,000 | \$8,282,000 | \$18.00 | \$25.07 |

- Incremental Design Template: Alternatives Analysis
 - 75 ~ 105 ft wide berm; Reduce Volume ~ 40%-45%
 - Reduce Costs ~ 21%-28%

POTENTIAL SAND SOURCES

- Regional Sand Sources (Prior Investigations)
- Charlotte County Erosion Control Project
- New Reconnaissance Survey Underway
- Upland Sand Mines



OPPORTUNITIES FOR PARTNERING

- Combining / Sharing Resources
 - Sand Sources
 - Subject Matter Experts & Staff Resources
 - “Economy of Scale” = Cost Savings {Mob/Demob}
- Beach Management Funding Assistance Program
 - Additional Points in the Scoring Criteria
 - Project Length, Recreational Benefits, Regionalization
 - Increased Eligibility for Cost Share Percentage
- Project Performance
 - Address All Critically Eroding Beach Segments
 - “Bigger” is “Better”

SCHEDULE

- Aug 2016: Notice to Proceed From County
- Fall 2016 – Spring 2017: Surveys, Hardbottom Analysis, Borrow Area Recon Level Search, Beach Fill Design
- Spring 2017: JCP Submittal
- Spring 2017 – Spring 2018: Permit Processing
- Spring – Summer 2018: Borrow Area Detailed Level Surveys, Final Design, Bid
- Fall 2018 – Spring 2019: Construction